Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the

application:

Listing of Claims:

Please cancel claim 10 without prejudice, and amend claims 1, 5, 6, 8, 9, 11, 14, 16-18

and 23 as follows:

1.   (Currently amended) Method for reducing cross-talk in a communication system

comprising a plurality of transmitters for transmitting encoded data signals via respective

communications channels, said method comprising the steps of:

processing a first encoded data signals from the plurality of transmitters utilizing

according to at least one pre-coding matrix to produce a first pre-coded signal, each said at least

one pre-coding matrix having associated with it a respective encoded data signal;

communicating said first pre-coded signal to a respective first communication channel;

and

adapting said at least one pre-coding matrix in response to an impairment indicative

signal;

said processing tending to offset channel impairments within said first communications

channel.

2.   (Previously presented) The method of claim 1, further comprising the steps of:

receiving said first pre-coded signal from said first communications channel; and

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generating said impairment indicative signal in response to a determination of a channel

impairment level of said first communications channel.

3. (Original) The method of claim 2, wherein said impairment indicative signal is

determined according to a least mean square (LMS) algorithm.

4. (Previously presented) The method of claim 1, wherein signals propagated via

each of said communications channels comprise a respective set of in-phase (I) and quadrature

(Q) signals forming carrierless amplitude and phase (CAP) modulated signals.

5. (Currently amended) The method of claim 1, wherein signals propagated via each

of said communications channels comprise a respective set of in-phase (I) and quadrature (Q)

signals forming quadrature amplitude modulated (QAM) signals.

6. (Currently amended) The method of claim 1, further comprising the step of:

prior to processing said first encoded data signal, selecting, as initial parameters of said at-

least one pre-coding matrix, a set of parameters tending to offset said channel impairments of

said first communications channel, said step of selecting comprising the steps of:

propagating a pre-defined training sequence via said first communications

channel;

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receiving said pre-defined training sequence from said first communications

channel; and

determining initial parameters of said at least one pre-coding matrix, using said

received pre-defined training sequence, related to channel impairments of said first

communications channel.

7. (Previously presented) The method of claim 4, wherein said step of adapting

comprises the steps of:

increasing an amplitude level of at least one respective set of said I and Q signals; and

repeating said steps of processing and communicating until an impairment indicative

signal level is less than a threshold level.

8. (Currently amended) The method of claim 1, wherein said communications

system comprises N transmitters, where N is an integer, each of said N transmitters performing

said steps of processing, communicating and adapting using respective encoded data signals.

9. (Currently amended) The method of claim 8, wherein each of said N transmitters

processes an encoded data signal according to N-1 utilizing a pre-coding matrixces, each of said

N-1 pre-coding matrixces being associated with a respective processing encoded data signals

from the other transmitters.

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10.   (Canceled)

11.   (Currently amended) The method of claim 8, wherein:

each of said N transmitters performs the step of selecting initial parameters for its

respective at least one pre-coding matrixees prior to processing a respective encoded data signal,

said selected initial parameters tending to offset channel impairments of said respective

communications channels, said step of selecting comprising the steps of:

        propagating a pre-defined training sequence via a respective communications

channel;

        receiving said pre-defined training sequence from said respective communications

channel; and

        determining initial parameters of said at least one pre-coding matrix, using said

received pre-defined training sequence, to adapt to said channel impairments of said

respective communications channel.

12. (Original) The method of claim 6, further comprising the step of training an

equalizer to reduce channel-specific impairments from said received pre-defined training

sequence prior to selecting said initial matrix parameters.

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13. (Original) The method of claim 11, further comprising the step of training an equalizer to reduce channel-specific impairments from said received pre-defined training sequence prior to selecting said initial matrix parameters.

14. (Currently amended) Method for reducing cross-talk in a communications system comprising a plurality of communications channels, each communications channel propagating a respective set of in-phase (I) and quadrature(Q) signals, said method comprising the steps of:

(a)   processing ~~at least one set of~~ I and Q signals from each communications channel utilizing ~~according to~~ a respective pre-coding matrix to produce ~~respective~~ pre-coded I and Q signals for each communications channel;

(b)   communicating said ~~at least one set of~~ pre-coded I and Q signals via a respective communications channels;

(c)   receiving, for ~~each communicated set of~~ said pre-coded I and Q signals, and generating difference error data indicative of transmission errors in received signals for each communications channel;

(d)   adapting ~~respective~~ the pre-coding matrixes ~~es~~ for each communications channel in responses to ~~responsive~~ received difference data; and

(e)   repeating steps (a) through (d) until said difference error data ~~associated with said at least one set of I and Q signals~~ is less than a threshold difference level.

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15.   (Previously presented) The method of claim 14, wherein said error data comprises mean square error data.

16.   (Currently amended) The method of claim 14, wherein said at least one set of in-phase (I) and quadrature (Q) signals form carrierless amplitude and phase (CAP) modulated signals.

17.   (Currently amended) The method of claim 14, wherein said at least one set of in-phase (I) and quadrature (Q) signals form quadrature amplitude modulated (QAM) signals.

18.   (Currently amended) The method of claim 14, further comprising the steps of:

(f)   increasing an amplitude level of said at least one set of said I and Q signals; and

(g)   repeating steps (a) through (d) until said difference error data associated with said at least one set of I and Q signals is less than a second threshold difference level.

19-22. (Canceled)

23.   (Currently amended) Apparatus for reducing cross-talk in a communications system comprising a plurality of transmitters for transmitting encoded data signals via respective communications channels, said apparatus comprising:

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means for processing a first encoded data signals from the plurality of transmitters

utilizing according to at least one pre-coding matrix to produce a first pre-coded signal, each said

at least one pre-coding matrix having associated with it a respective encoded data signal;

means for communicating said first pre-coded signal to a respective first communications

channel; and

means for adapting said at least one pre-coding matrix in response to an impairment

indicative signal;

said processing tending to offset channel impairments within said first communications

channel.

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